

REAL-TIME PCR 384 Well – 1No.
Doc. No: ST/12/RT-PCR /2016-17/07

Proposed Application:

To augment the existing facility required to amplifying cDNA by combining synthesis of RNA template with PCR amplification, Gene-expression analysis, Pathogen Quantitation, SNP genotyping, Plus/Minus Assays that utilize internal positive Control, dissociation curve analysis, multiplexing and complete end Point assays.

Features:

- ❖ User-friendly software should be compatible with laptop/computer.
- ❖ Customized volume calibration with the plate used.
- ❖ Linear dynamic range should be minimum of 5 logs.
- ❖ Sub assays with-in single plate to facilitate independent monitoring and analysis ability.
- ❖ Data export to excel sheet for further analysis.
- ❖ Easy transfer of PCR protocols from other real time platforms.
- ❖ Capable of performing multiplex assays
- ❖ Capable of multi color (minimum of 5 colour) detection system.
- ❖ The system should be compatible to third party reagents

Specifications:

Thermo Module:

- ❖ Block of 384 well block with adjustable ramp rate
- ❖ Block should support 384 well PCR plates
- ❖ System should support the reaction volume of 10-25 μ l.
- ❖ Block homogeneity – 20 to 70°C: $\leq \pm 0.3^\circ\text{C}$ & 95°C: $\leq \pm 0.4^\circ\text{C}$.
- ❖ Control accuracy per well $\pm 0.2^\circ\text{C}$.
- ❖ Hot start facility.
- ❖ Lid lock to prevent accidental opening while system is running.

Optical Module:

- ❖ Should be capable of detection of most fluorescing dyes (SYBR, FAM, VIC, JOE, TET, HEX, TAMRA, ROX etc).
- ❖ Detector: PMT/Cooled CCD camera for detection of fluorescence
- ❖ Dynamic Range: > 5 orders of magnitude
- ❖ Sensitivity ≤ 50 fm fluorescent

Essential :

RT-PCR Reagents & Consumables required for 10,000 reactions.

Computer :

A suitable branded business line computer with latest specifications to be quoted in detail with laser printer.

- During installation the supplier should provide a chemical installation kit using which a 2-fold resolution for a single copy gene could be demonstrated with over 99% confidence level.
- The supplier should be able to supply all the reagents and consumables for the operation of the system for a minimum period of 10 years.
- To supply reagents containing a passive internal reference to normalize non-PCR related fluorescence fluctuations such as pipetting errors and sample evaporation.

Note : The running cost per sample to be analyzed is to be defined separately.